

2023

TÜRKİYE

AUTOMOTIVE

INDUSTRY

SUSTAINABILITY

ACTION PLAN

AUTOMOTIVE  
INDUSTRY  
EXPORTERS'  
ASSOCIATION

**OiB**

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As part of the preparation process of the Türkiye Automotive Industry Sustainability Action Plan, the Türkiye Automotive Industry Sustainability Action Plan Workshop was held on 20.10.2022 with a view to collecting feedback from industry representatives. We would like to thank the Ministry of Trade, TİM, OİB, OSD, TAYSAD and representatives of manufacturers for their valuable contributions to the workshop.

Project Owner  
Automotive Industry Exporters' Association (OİB)

Project Consultant  
Metsims Sustainability Consulting

## ABOUT THE ACTION PLAN

Announcing the European Green Deal (EGD) on December 19, 2019, the European Commission set forth the goal of the European Union (EU) to be a climate-neutral continent by 2050 and introduced a new approach to creating a growth strategy that would ensure the completion of the EU's sustainability-centric industrial transformation. As part of this transformation, the Carbon Border Adjustment Mechanism draft regulation announced in 2021 is scheduled to come into effect on October 1, 2023, with a three-year transition period. In line with climate change, sustainability, and EGD objectives, several studies are being conducted, including our country's preparation for this regulation.

In Türkiye, which accelerated its efforts by signing the Paris Agreement in October 2021, manufacturers and exporters are also engaged and contributing to the progress on these multiple fronts. In this context, sector reports and action plans prepared in order to enhance alignment with global value chains and increase Türkiye's share in international investments are of significant importance. Efforts to analyze the sustainability of the Türkiye automotive industry, 80% of whose exports go to European countries, and to offer action proposals, will also serve as key drivers towards this goal.

Institutions and organizations are now facing unprecedented challenges due to rising global competition, the climate crisis, corporate governance, and social issues. The importance of developing strategies to adapt to the European Green Deal (EGD) and the evolving global value chain has been steadily increasing. A roadmap has been created for both the public and private sectors, outlining the targets established in the Green Deal Action Plan. This plan was developed with contributions from all Ministries under the coordination of the Ministry of Trade. In light of the policies on Climate Change, Sustainability, and compliance with the EGD goals published by the European Commission, our umbrella organization, the Türkiye Exporters' Assembly (TIM), has formulated and publicly shared the Sustainability Action Plan. This plan aims to provide guidance to our exporters. It is crucial to evaluate the achievement of the first objective of the action plan, which is the "Creation of Sectoral Action Plans" along with the associated alignment processes.

The Türkiye Automotive Sector Sustainability Action Plan, which was created in light of all these developments, features descriptions of each goal, current situation analysis, action code, goal, implementation period, responsible and relevant institutions and organizations and Key Performance Indicators & Performance Indicators (KPIs & PIs) for action follow-up. Under each heading, the description column provides information about the rationale and significance of each action:

- The 'current situation analysis' provides a comprehensive overview of ongoing initiatives, strategies that are applicable and adhered to within the automotive industry for the respective action.
- The 'Goals' section outlines the specific actions required to achieve the intended outcomes. The implementation period indicates the timeframe for accomplishing the goals
- The 'Responsible' section identifies the organizations accountable for achieving the goals.
- The section titled "Institutions and Organizations that May Be Relevant" identifies potential collaborative partners that can contribute to the realization of the action.

For a comprehensive list of KPIs and PIs associated with the goals, please refer to the APPENDIX-KPI at the end of the report. The KPIs and PIs have been developed to track progress toward the goals and measure advancements. While KPIs serve as fundamental indicators, their monitoring is mandatory, and PIs will be monitored to the extent possible.



## TÜRKİYE AUTOMOTIVE INDUSTRY SUSTAINABILITY ACTION PLAN

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## ACTION PLAN SUMMARY

Action Code	Action Plan	Implementation Period	Responsible	Engaged
OSEP01	<b>1. Awareness</b>	April 2023 - March 2025	OİB	OSD, TAYSAD
OSEP02	<b>2. Current State Assessment</b>	April 2023 - December 2023	OİB	OSD, TAYSAD, Ministry of Energy and Natural Resources, Ministry of Environment, Urbanization and Climate Change, Ministry of Industry and Technology
OSEP03	<b>3. Access to Finance and Collaborations for Green Transformation</b>	July 2023 - June 2024	TİM, OİB	Ministry of Industry and Technology, Ministry of Energy and Natural Resources, Ministry of Trade, Ministry of Treasury and Finance
OSEP04	<b>4. Reducing Environmental Impacts and Transitioning to Circular Economy</b>	July 2023 - June 2025	OİB OSD TAYSAD	OIZ administrations, Ministry of Energy and Natural Resources, Ministry of Industry and Technology, Ministry of Environment, Urbanization and Climate Change
OSEP05	<b>5. Transition to New Technologies for Eco-Friendly Vehicles</b>	April 2023 - March 2026	OİB OSD TAYSAD	Ministry of Industry and Technology, Ministry of Treasury and Finance, Ministry of Trade, TÜBİTAK, OTEP
OSEP06	<b>6. Social Sustainability</b>	April 2023 - March 2028	OİB	MEB, YÖK, TİM, OSD, TAYSAD

## Goals and KPIs

Goal-1	Goal-2	Goal-3	Goal-4	Goal-5
1.1 Identifying current level of awareness and training needs with the contribution of stakeholders and members and through surveys	1.2 Planning collaborative meetings	1.3 Increasing levels of awareness and education at managerial, blue-collar and white-collar positions through various activities such as working groups, workshops, trainings and seminars.	1.4 Ensuring the participation of member companies in national and international conferences and events held as part of the European Green Deal and sharing the annual reports with the members	
2.1 Promoting corporate carbon footprint accounting and calculations	2.2 Promoting product life cycle assessments	2.3 Identifying energy use and water consumption rates and their sources	2.4 Identifying the amount of waste generated in processes	
3.1. Engage with policy makers and technical efforts for access to facilitate investment for green transformation and creating dedicated financial resources	3.2 Following and implementing international standardization and certification practices	3.3 Planning large-scale projects such as solar and wind power plants to be utilized by member companies, ensuring an industry-wide involvement in developing regulations and leading project implementation	3.4 Creating a finance platform to provide access to finance and B2B communication	
4.1 Reducing scope 1 and scope 2 emissions by increasing energy efficiency in production	4.2 Reducing scope 2 emissions by boosting the share of green energy use in production	4.3 Preventing waste generation and increasing recycling rate with the adoption of the zero waste principle	4.4 Increasing the utilization rate of recycled and recyclable raw materials	4.5 Adoption of best available techniques (BAT) in manufacturing and increasing practices
5.1 Providing the policy makers with insights to enhance the investment environment for the development of innovative vehicles that run on alternative fuels in Türkiye	5.2 Contributing to the transformation of member companies into EVs and autonomous vehicles for manufacturing new parts, systems and technologies	5.3 Increasing the production and export volume of EV parts in the supply industry	5.4 Organizing custom promotional activities for targeted export markets and global OEMs	5.5 Reducing the use phase emissions and complying with the EU's emission standards for motor vehicles
6.1 Investing in young talent and transforming the existing human capital	6.2 Zero tolerance to discrimination	6.3 Complying with occupational safety rules and achieving zero-accident workplaces	6.4 Never tolerating corruption, mobbing and bribery	6.5 Increasing the women employment rate

## AWARENESS



### INFORMATION AND AWARENESS ACTIVITIES

The primary focus in the automotive sector is to gain insights into the green transformation goals and comprehensive changes, with particular emphasis on the European Green Deal (EGD) and effective sustainability management. Companies should possess the knowledge to apply the acquired learnings at both the managerial and employee levels, integrating them into their own business models. Awareness and training initiatives should equip companies with the necessary skills to guide and shape their business practices in alignment with their expectations. Given the importance of sector-wide collaboration and cooperation in raising awareness, it is recommended to organize collective wisdom meetings involving various industry branches and public institutions. Encouraging the participation of senior managers and investors in training activities and collective wisdom meetings will enable employees to focus on pertinent issues. Furthermore, progress resulting from these initiatives and the outcomes of collective wisdom meetings should be disseminated by organizations such as OİB, OSD, TAYSAD through media and social media channels.

### CURRENT SITUATION

Sector associations and business organizations play a pivotal role in guiding the sector through information dissemination and awareness-raising activities. OİB, OSD, and TAYSAD inform their member companies about green transformation and sustainability, organizing seminars on the subject.

While larger firms have swiftly adapted, many firms still need to internalize the significance of this issue.

Action Code	OSEP01
Goals	<p><b>OSEP01.1.</b> Identifying current level of awareness and training needs with the contribution of stakeholders and through surveys</p> <p><b>OSEP01.2.</b> Planning Collective Wisdom meetings</p> <p><b>OSEP01.3.</b> Increasing levels of awareness and education at managerial, blue-collar and white-collar positions through various activities such as working groups, workshops, trainings and seminars.</p> <p><b>OSEP01.4.</b> Ensuring the participation of member companies in international conferences and events held as part of the EGD and sharing the annual reports with the members</p>
Implementation Period	April 2023- March 2025
Responsible	OİB
Relevant Institution/Organization	OSD and TAYSAD
This action is followed up with respect to the KPIs and PIs specified within the scope of the study. Please find attached the KPI & PI list.	



## 2

## CURRENT STATE

## ASSESSMENT

**SCIENTIFIC EXPLANATION FOR ENVIRONMENTAL IMPACTS OF PRODUCTS AND ORGANIZATIONS**

To comprehensively assess the environmental impacts of organizations and products, it is crucial to employ clear, transparent, and science-based calculations. Measurement is the key element for greenhouse gas emission reduction initiatives. The significance of measurability becomes evident at two key junctures.

Firstly, it allows for the identification and prioritization of hotspots to mitigate environmental impacts and manage them effectively. Secondly, it fosters collaboration between producers and customers along the value chain by addressing questions regarding measurability.

Evaluating sustainability efforts realized within this context under two primary categories, namely product sustainability and corporate sustainability, would greatly enhance the efficacy of compliance and monitoring mechanisms.

Product and corporate sustainability are interconnected concepts that mutually reinforce each other. As outlined in the details below, every improvement and development initiative undertaken on an organizational level directly impacts the sustainability of the product.

While the OSEP (Automotive Industry Action Plan) based on the frameworks of the European Green Deal (EGD) primarily focuses on emission-related targets and explanations, evaluating the water footprint is another crucial environmental parameter that warrants assessment.

Companies can strengthen water management by calculating both corporate and product-based water footprints in accordance with ISO 14046 guidelines.

**MEASURING ENVIRONMENTAL IMPACTS AT THE ORGANIZATIONAL LEVEL**

Typically, environmental impact measurement at the organizational level adheres to standards such as [ISO 14064](#) or the [GHG Protocol](#). Calculation and reporting of greenhouse gas emissions encompass all activities undertaken by the company.

While the current taxation processes aligned with the European Green Deal (EGD) focus solely on the organization's direct emissions (scope 1), the indirect emissions are expected to be included as scope 2 in the short term and scope 3 in the long term. It is crucial to analyze the current situation and consistently measure the impact. During calculations, the source of hotspots may vary among producers. It is important to identify all emission sources before the calculation and ensure that high-emission sources are not excluded from the system boundaries.

**MEASURING ENVIRONMENTAL IMPACTS AT PRODUCT LEVEL**

Key assessment approaches utilized for product sustainability include ISO 14040/44 [Life Cycle Assessment \(LCA\)](#) and ISO 14067 product carbon footprint. The process of calculating environmental impacts at the product level grants producers the opportunity to evaluate the specific impacts of their products.

Simultaneously, it facilitates the assessment of Research and Development (R&D) projects aimed at reducing emissions in terms of their environmental impact.

## CURRENT SITUATION

Given the automotive industry's long-standing position as a leading sector in Türkiye's exports, with 80% of its exports directed to European countries, it is essential to assess environmental impacts, monitor climate-related risks and opportunities, and safeguard the industry's market share.

Automotive manufacturers must measure and manage emissions both during vehicle production and usage to meet the emission reduction targets set by the EGD and Fit for 55, while also maintaining their market share in the industry. Although studies on calculating environmental impacts at the organizational and product levels have gained significant traction in the industry in recent years, these studies should particularly guide R&D initiatives. Conducting LCA benchmarking during the product design phase will play a vital role in determining the environmental impact of the intended product and conducting research for alternative designs.

The automotive industry, which encompasses a wide range of inputs in production processes, inevitably generates production waste.

Embracing the Zero Waste philosophy by prioritizing waste prevention at its source, following the waste management hierarchy, is paramount. Process improvements should be implemented to reduce unavoidable waste and promote source separation. Proper waste separation and recycling are of utmost importance in minimizing environmental impacts and disposal costs.

Conducting studies on the recovery of wastewater generated during degreasing, phosphating, and painting processes in the automotive industry will contribute to the sustainability of the Türkiye geography, which is experiencing water scarcity, and the industry.

Action Code	OSEP02
Goals	<p><b>OSEP02.1.</b> Promoting corporate carbon footprint calculations</p> <p><b>OSEP02.2.</b> Promoting product life cycle assessments</p> <p><b>OSEP02.3.</b> Identifying energy use and water consumption rates and their sources</p> <p><b>OSEP02.4.</b> Identifying the amount of waste generated in processes</p>
Implementation Period	April 2023 – December 2023
Responsible	OİB
Relevant Institution/Organization	OSD, TAYSAD of Environment, Urbanization and Climate Change, Ministry of Industry and Technology
This action is followed up with respect to the KPIs and PIs specified within the scope of the study. Please find attached the KPI & PI list. →	

## ACCESS TO FINANCE AND COLLABORATIONS

### FOR GREEN TRANSFORMATION

#### COOPERATING WITH STAKEHOLDERS TO ACHIEVE THE GOALS

To effectively achieve the green transformation goals and comprehensive changes in the automotive industry, it is crucial to embrace common objectives, establish cooperation mechanisms, and create facilitating elements for measuring and mitigating impacts.

These elements may encompass collaboration between producers, political support, or financial support. The provision of financial support and investment funds is essential for the successful realization of planned actions.

#### CURRENT SITUATION

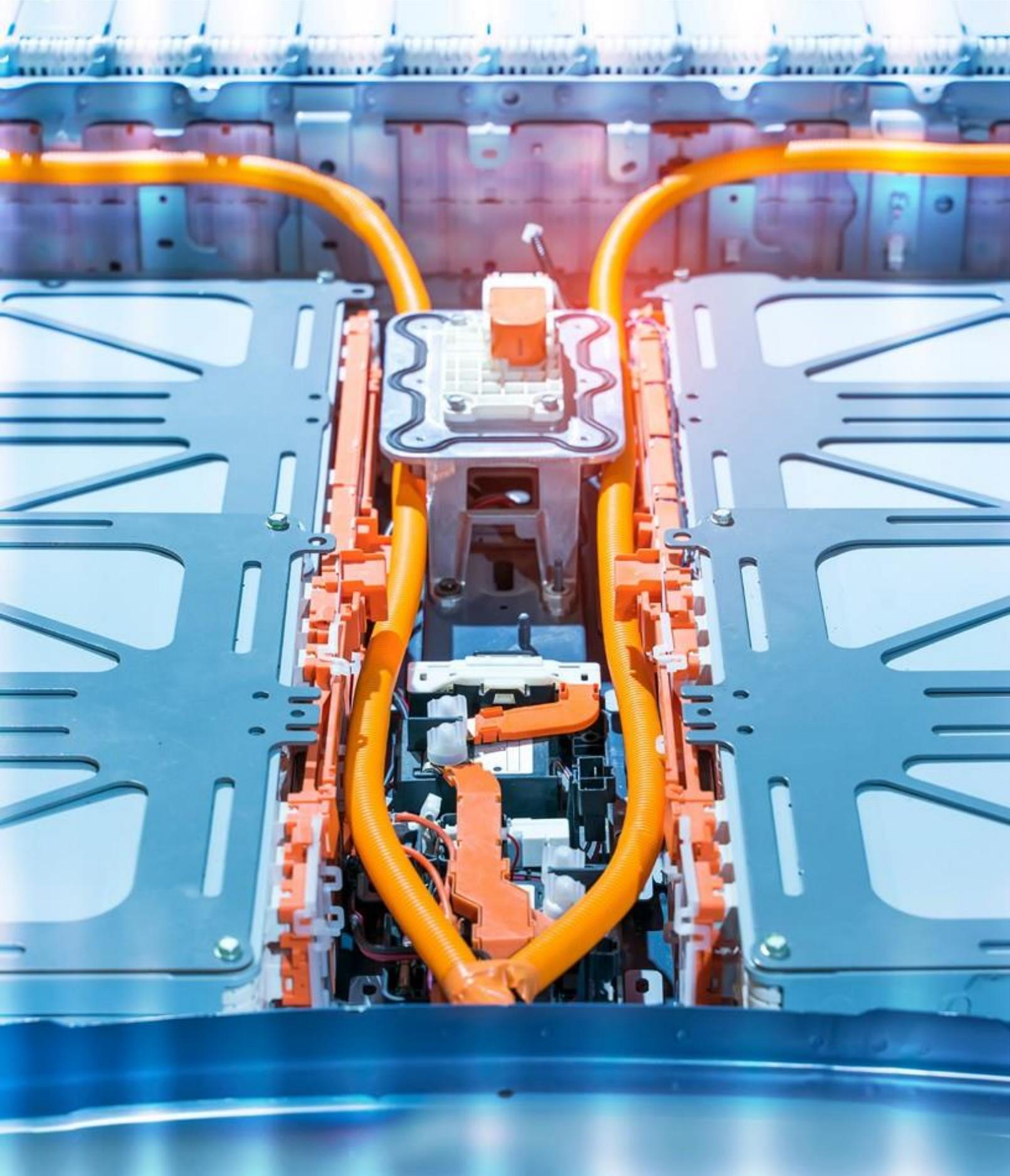
Given the automotive industry's multi-layered value chain and numerous stakeholders, collaborations hold significant importance in attaining the set goals. Currently, supplier-customer relationships in the automotive industry are notably more advanced compared to other industries. Specifically, the Türkiye Automotive Industry stands out as one of the sectors that foster open communication and collective wisdom through joint cooperation,

involving manufacturers, sector organizations, and association members.

Furthermore, a cooperation mechanism should be developed to facilitate B2B communication within the market and bring together financing providers and buyers. This entails expanding existing contacts, organizing collective wisdom meetings, and establishing shared communication platforms. It is important to enhance existing incentive mechanisms and provide support to startups that generate products and ideas for the future. Addressing barriers that hinder access to external incentives is crucial. Since Türkiye is not an EU member, it is unable to benefit from certain significant incentives granted exclusively to EU member states. However, efforts can be made to foster access to these resources as much as possible, in close collaboration with the Ministry of Trade.

The outcomes of collaborations and organized efforts can only yield success when integrated into the country's policies and programs. In this regard, it is important for policymakers to support industry players in such cooperative endeavors.

Action Code	OSEP03
Goals	<p><b>OSEP03.1.</b> Seeking access to finance and incentives for green transformation investments</p> <p><b>OSEP03.2.</b> Following and implementing international standardization and certification practices</p> <p><b>OSEP03.3.</b> Planning large-scale projects to be utilized by member companies, such as SPPs, WPPs, ensuring an industry-wide involvement in the establishment of regulations and spearheading project implementation</p> <p><b>OSEP03.4.</b> Creating a finance platform for access to finance and ensuring B2B communication</p>
Implementation Period	July 2023 – June 2024
Responsible	TİM, OİB
Relevant Institution/Organization	Ministry of Industry and Technology, Ministry of Trade, Ministry of Treasury and Finance, Ministry of Energy and Natural Resources
This action is followed up with respect to the KPIs and PIs specified within the scope of the study. Please find attached the KPI & PI list. →	



## 4

## REDUCING ENVIRONMENTAL IMPACTS AND

## TRANSITIONING TO CIRCULAR ECONOMY



### REDUCING THE ENVIRONMENTAL IMPACTS OF PRODUCTS AND ORGANIZATIONS

To effectively reduce environmental impacts identified holistically, it is imperative to establish approaches, methods, and take proactive measures. Once the environmental effects are identified, it becomes crucial to decrease the level of demand from policymakers or customers, aiming to enhance the current market share and export levels. Various actions can help mitigate the impacts, such as reducing raw material and energy consumption, utilizing low-emission materials and energy sources, and minimizing emissions and waste during production. Guiding industrial activities based on [Best Available Techniques \(BAT\)](#), which identify feasible technologies for reducing environmental impacts and transitioning to a circular economy, can steer the overall progress.<sup>1</sup>

The waste hierarchy, encompassing all processes from raw material usage to waste management, energy consumption to transportation emissions, should be strictly observed, especially regarding energy consumption directly related to production. There are two alternatives for reducing emissions related to electricity consumption. The first option involves companies directly generating their energy through renewable sources, establishing renewable energy power plants either within their premises or outside their boundaries. In cases where structural changes or necessary investments are not always feasible, companies can opt to procure electricity from providers of renewable energy, such as through programs like the Green Tariff, to support renewable energy utilization. Certificates like Renewable Energy Guarantees of Origin System ([YEK-G Certificate](#)), [I-REC](#), etc., can transparently and reliably demonstrate the origin of the energy used to consumers.

The environmental impacts of raw materials, predominantly steel at present, need to be re-evaluated considering the evolving vehicle technologies and their associated new parts. In particular, lithium-ion battery production for BEVs will cause additional emissions from

raw materials. Consequently, the production of electric vehicles will lead to higher emissions than internal combustion engine vehicles (ICEVs) during the production phase. While the emissions from the production of EVs are higher than ICEVs, when the overall life cycle emissions of EVs are considered, the relatively low emissions during their usage offset the emissions from their production stage.

Achieving the low emission potentials specified in the usage phase may be possible by transitioning to low-carbon renewable power sources.

End-of-life disposal of the product should be considered at the design stage and raw material selection should be made accordingly. According to the ELV Directive 2000/53/EC<sup>2</sup> issued by the EU, along with the Regulation on the Control of End-of-Life Vehicles (ELV) that closely aligns with this directive, a minimum of 95 percent of the total vehicle mass must be reused or recovered, with at least 85 percent being reused or recycled.

Using recyclable and recycled raw materials in vehicle parts production is important in achieving these targets. Updating the ELV Directive is recommended, particularly with regards to obligations for plastics.

Three main agenda items stand out in this context:

- Increasing the rate of waste collected from end consumers for compulsory recycled plastics,
- Reducing process efficiency losses and fuel use, and allocating recycled content proportionally, and,
- Proving recycling rates with third-party certification.<sup>4</sup>

<sup>1</sup> Automotive BAT Checklist

<sup>2</sup> ELV Directive Annex 1

<sup>3</sup> Regulation on the Control of End-of-Life Vehicles

<sup>4</sup> ELV Directive Review, April 2022

## CURRENT SITUATION

From a corporate perspective, the largest contributor to greenhouse gas emissions for vehicle manufacturers are scope 3 emissions, particularly during the use phase of the vehicle. The second-largest contributor is the raw materials purchased and used in production. When considering the automotive supply industry, emissions from purchased goods within scope 3 are generally dominant in sectors manufacturing products such as metal parts, plastic parts, wood materials, and textile products. However, in sectors such as glass, aluminium, etc., most environmental impacts or carbon footprints can be attributed to scope 1 and scope 2 stages, where energy consumption occurs.

Steel, which is the most used raw material by weight in vehicle production, accounts for a significant portion of cradle-to-gate emissions. Emissions from steel can vary depending on the type of flat steel production technology used (BOF, EAF, etc.). Emissions from steel production, obtained by melting iron scrap from electric arc furnaces, which are extensively used in Türkiye, have lower emission values than primary production steel, known as ore production. This could further promote a shift towards low-emission steels to reduce the cradle-to-grave emissions of the vehicle.

Market research should be conducted to understand the environmental impact of raw materials used in vehicle production, including metal parts, and to inform raw material selection for an eco-friendlier approach.

Different raw materials can be evaluated in the search for raw materials for supply industry products. In particular, companies located in OIZs can benefit from the waste from one producer, serving as a source of raw materials. Industrial symbiosis projects that benefit both parties can be developed and evaluated from a life cycle perspective.

Production-related emissions, which usually come second after emissions associated with procured raw materials in hotspot analysis, are directly proportional to energy consumption. The most prominent energy sources are natural gas and electricity.

Considering sector realities and the location plans of the companies, it can be said that finding a direct alternative to natural gas in production is currently relatively difficult. Hydrogen energy, which is considered as the closest alternative, is still in development. Therefore, until there are significant advances in alternative fuels to natural gas, it may be more effective and faster to focus on energy efficiency projects. In the future, it is expected that fossil fuels will be completely abandoned and heavy industries will gravitate towards alternative fuels such as hydrogen energy.

Action Code	OSEP04
Goals	<p><b>OSEP04.1.</b> Reducing scope 1 and scope 2 emissions by increasing energy efficiency in production</p> <p><b>OSEP04.2.</b> Reducing scope 2 emissions by boosting the share of green energy use in production</p> <p><b>OSEP04.3.</b> Reducing production waste at its source and increasing recycling rate with the adoption of the zero waste principle</p> <p><b>OSEP04.4.</b> Increasing the utilization rate of recycled and recyclable raw materials</p> <p><b>OSEP04.5.</b> Adoption of best available techniques (BAT) in manufacturing and expanding the scope of their use cases</p>
Implementation Period	July 2023 – June 2025
Responsible	OİB, OSD, TAYSAD
Relevant Institution/Organization	OIZ administrations, Ministry of Energy and Natural Resources, Ministry of Industry, Ministry of Environment, Urbanization and Climate Change
This action is followed up with respect to the KPIs and PIs specified within the scope of the study. Please find attached the KPI & PI list. →	

Emissions associated with energy consumption fall within Scope 2 and the carbon footprint of such depends on the source of the electricity.

The electricity used in production is generally supplied from a mix of the national grid, although some companies opt to generate some or all of their electricity within their own facilities.

While the unit carbon footprint of grid electricity varies depending on the electricity mix of the country, the carbon footprint of renewable energy is practically zero. As such, companies' shift towards renewable energy in their production facilities can play an important role in reducing their electricity-related emissions. The importance and development of collaborative mechanisms to enable this shift are discussed in Section 3: "Access to Finance and Cooperation for Green Transformation". Product-specific data on energy, water, and raw material consumption per unit should be tracked to evaluate the impact of energy efficiency and recovery.

According to LCA studies, the environment impact of a typical internal combustion engine vehicle throughout its life cycle is dominated by the impact generated during the usage stage, accounting for a significant 70% of the total life cycle impact. The second hotspot is emissions from production, which account for 15%.<sup>5</sup> The source of energy used in vehicles is becoming increasingly important when usage-stage emissions and alternative fuels are considered. For example, the greenhouse gas emissions caused by a typical electric vehicle in 100 km are 0.8 kg CO<sub>2</sub> in France, compared to 7.5 kg CO<sub>2</sub> in the UK and 8.0 kg CO<sub>2</sub> in Türkiye.<sup>6</sup> The source of energy used in electric vehicles plays a crucial role, and reducing usage-related emissions can only be achieved through grid decarbonization targets and strategies.

On the other hand, the end-of-life of products, while it only accounts for a minor 5%, is still of great importance from the perspective of the circular economy. An average end-of-life vehicle has a reuse/recycling rate of 95%.

Widespread collection, reuse, and recycling of vehicle parts in accordance with the End of Life Vehicles Directive will contribute to the circular economy in terms of reducing the use of natural resources in raw material procurement.

Another solution that may indirectly affect the environmental impact of products is the [Digital Product Passport \(DPP\)](#). Initially planned for batteries, the passport system is expected to include information such as the origin of materials, material composition, carbon footprint, recycled material ratio, durability, reuse, and recycling guidelines. Informing consumers and other stakeholders about the sustainability characteristics of products and materials will contribute to the circular economy and enable collaboration for best practices, and in turn, will lead to actions to reduce the carbon footprint.

<sup>5</sup> OSD Ürün Yaşam Döngüsü Raporu, 2022, OSD\_URUN\_YASAM\_DONGUSU.pdf

<sup>6</sup> OSD Ürün Yaşam Döngüsü Raporu, 2022, OSD\_URUN\_YASAM\_DONGUSU.pdf



## 5

## TRANSITION TO GREEN TECHNOLOGIES

## FOR ECO-FRIENDLY VEHICLES



### IDENTIFYING THE RISKS AND OPPORTUNITIES IN THE GREEN TRANSFORMATION

The climate crisis has urged a transformation across the globe, which brings certain changes with it. The automotive sector is one of the sectors that could be seriously affected by this climate-driven transformation. The shift from traditional to more environmentally friendly vehicles is one of the most tangible results of this change. Another ongoing trend is the transition from conventional to autonomous vehicles, from internal combustion to electric drives, and from simpler vehicles to vehicles incorporating more advanced technologies. These transitions are expected to reduce usage of and demand for components such as transmissions, fuel tanks, gear shift levers, internal combustion engines, and fuel pumps. Conversely, the production of and demand for alternative parts such as sensors, cameras, batteries, electronic components, and digital screens will increase. For manufacturers and the industry at large, keeping pace with this transformation is crucial to ensure their continuity. The same transformation is also taking place within the main industry, and the market demand is shifting in a different direction. This transformation is a radical one and rapid adaptation to it is necessary, as failing to adapt in time might result in loss of market share.

### CURRENT SITUATION

The OİB has around 8,000 manufacturers in its ranks. Among these members, there are various manufacturers who produce the products that have seen either an increase or a decrease in demand. The automotive industry is going through a time of profound transformation as climate change targets call

for reduced emissions, a shift towards electric, autonomous and alternative-fuel (e.g. hydrogen or fuel cell) with distinct charging infrastructures and systems, and a change in product and manufacturing standards.

It is essential for the automotive industry to establish a technology base, engage in R&D and innovation to keep pace with this change. As vehicle designs become simpler in newer generations compared to internal combustion vehicles, it may be beneficial to focus on scalable technologies in R&D efforts.

The growing prevalence of low-emission vehicles is set to drive the demand for renewable and low-carbon fuels. To meet this demand and ensure widespread use of low-emission vehicles, it is necessary to establish an expansive network of charging stations and fuel supply infrastructure. The emissions created by electric cars are directly proportionate to the grid electricity. To lower emissions resulting from the use of electric vehicles, the carbon intensity of grid electricity must be reduced. To achieve this, electric capacity should be shifted from fossil fuels to renewables to the greatest extent possible. Another important issue is the waste generated by new technologies. While the end-of-life impact of electric vehicles is low compared to other stages of the vehicle's life, this can only be achieved through proper recycling and disposal methods. The reuse of end-of-life batteries will lead to reduced environmental impacts, especially in terms of resource efficiency, such as reducing mining activities and waste going to disposal. With the increasing demand for batteries, projects related to battery recycling should be developed and supported to ensure effective management of waste.

Action Code	OSEP05
Goals	<p><b>OSEP05.1.</b> Providing the public administration with valuable insights to enhance the investment environment for the development of innovative vehicles that run on alternative fuels in our country</p> <p><b>OSEP05.2.</b> Contributing to the development of member companies and supporting their transformation as they gear up for batteries, new parts, systems and technologies specific to EVs and autonomous vehicles</p> <p><b>OSEP05.3.</b> Engaging in the export of and increasing the export volume of EV parts in the supply industry</p> <p><b>OSEP05.4.</b> Organizing custom promotional activities for targeted export markets and global OEMs</p> <p><b>OSEP05.5.</b> Reducing the greenhouse gas emissions generated by vehicles during their use and complying with the EU's emission standards for motor vehicles</p>
Implementation Period	April 2023 – March 2026
Responsible	OİB, OSD, TAYSAD
Relevant Institution/Organization	Ministry of Industry and Technology, Ministry of Treasury and Finance, Ministry of Trade, TÜBİTAK, OTEP
This action is followed up with respect to the KPIs and PIs specified within the scope of the study. Please find attached the KPI & PI list. →	

## 6

## SOCIAL

## SUSTAINABILITY



### HOLISTIC ASSESSMENT OF SUSTAINABILITY AND SOCIAL COMPLIANCE

The automotive sector should evaluate sustainability in a comprehensive manner and take into account legal and social compliance in its operations. Accordingly, it should be ensured that all individuals or groups should be treated equally regardless of gender, race, colour, ethnicity, genetics, language, religion or belief, political or other opinions, minority status, property, birth, disability, age, or sexual orientation, corruption should be combated, and compliance with laws on child labor should be monitored carefully.

Occupational safety related activities should strive for zero accidents. This transformation will be accelerated by using these evaluations as a criterion for procurement decisions across the industry.

Sustainable procurement criteria, which may initially be created by the main industry players, can be expanded across the industry by an umbrella organization.

### CURRENT SITUATION

It is safe to say that sustainability in business is not possible without assessing environmental and governance related issues from a social viewpoint.

Social sustainability, one of the three pillars of sustainability, encompasses a wide range of topics including equality, diversity, development, social capital, social support, human and labor rights, social responsibility, and social justice. Compared to other sectors, the automotive industry has a significantly low rate of women employment.

While the overall women employment rate in Türkiye is around 29.3%, the percentage of women employees in the automotive industry, among white-collar workers, is stated as 25%.<sup>7</sup> If blue-collar workers are also taken into account in the calculation, this figure drops below 25%. As such, it is necessary to increase women's employment in the industry.

In automotive, which is classified as a hazardous industry, efforts should be made to improve occupational health and safety practices, provide a baseline level of training to workers, and implement a principle of zero accidents. In a time when the automotive sector is undergoing rapid transformation, it is crucial to attract young talent to the industry and to make systemic changes in relevant departments of educational institutions (technical high schools, universities, institutes, etc.) to adapt to innovation and change.

<sup>7</sup> Women in the Automotive Industry, 2022 <https://www.osd.org.tr/saved-files/PDF/2022/02/08/Turkiye-otomotiv-sanayiinde-kadin-arastirmasi.pdf>

Action Code	OSEP06
Goals	<p><b>OSEP06.1.</b> Investing in young talent and transforming the existing human resources</p> <p><b>OSEP06.2.</b> Full adherence to non-discrimination</p> <p><b>OSEP06.3.</b> Complying with occupational safety rules and achieving zero-accident workplaces</p> <p><b>OSEP06.4.</b> Never tolerating corruption, mobbing and bribery</p> <p><b>OSEP06.5.</b> Increasing the female employment rate</p>
Target Completion Time	April 2023 – March 2028
Responsible	OİB
Relevant Institution/Organization	MoNE, YÖK, TİM, OSD, TAYSAD
This action is followed up with respect to the KPIs and PIs specified within the scope of the study. Please find attached the KPI & PI list. →	



## GLOSSARY OF TERMS

<a href="#">B2B</a>	Business-to-Business is a term that refers to all transactions and activities conducted between businesses. It does not cover commercial transactions between companies and individual consumers, but rather focuses on transactions within the supply chain.
<a href="#">Digital Product Passport</a>	Introduced by the European Commission following the Circular Economy Action Plan and the Ecodesign for Sustainable Products Regulation, DPP aims to establish a basic design for different material and product groups compatible with sector-specific realities. DPP provides information on the origin, composition, repair, and disassembly options of a product as well as how the various components can be recycled.
<a href="#">Fit for 55</a>	A package designed by the European Union to ensure compliance with the EU's climate objectives and to reduce greenhouse gas emissions by 55% by 2030.
<a href="#">GHG Protocol</a>	An international calculation tool that enables the identification and management of greenhouse gas emissions.
<a href="#">ISO 14064 Standard</a>	An international standard that specifies the requirements for the determination, calculation, and reporting of greenhouse gas emissions and removals.
<a href="#">I-REC</a>	The International REC Standard is an international Energy Attribute Certificate (EAC) that has been created to track the origin and verify the consumption of renewable energy in any country in the world. I-REC Standard is a non-profit organization that provides a robust attribute tracking standard for use around the world.
<a href="#">Climate Neutral</a>	Refers to achieving net zero emissions by neutralizing the greenhouse gases emitted into the atmosphere. This can be achieved by supporting climate-focused projects in various fields such as agriculture, transportation, and energy and intervening in the stages where carbon dioxide is emitted.
<a href="#">Scope 1 Emissions</a>	Direct greenhouse gas emissions from a reporting company's property or vehicles.
<a href="#">Scope 2 Emissions</a>	Indirect greenhouse gas emissions associated with the purchase of electricity, steam, heat, or cooling
<a href="#">Scope 3 Emissions</a>	Indirect emissions generated by a company's activities (excluding those that fall within Scope 2). Scope 3 includes emissions both upstream and downstream of the company's activities. Upstream emissions occur during the production that a company purchases for use in its own manufacturing processes. Downstream emissions occur during the usage of the goods manufactured by the company.
<a href="#">Best Available Techniques</a>	A document containing available techniques designed to prevent the environmental impacts from production processes or reduce said impacts when prevention is not possible.
<a href="#">Life Cycle Assessment</a>	<a href="#">Life Cycle Assessment (LCA)</a> is a scientific approach in which the environmental impact and pollution arising at all stages of a product or service from cradle to grave, such as production, consumption, and disposal, are calculated in accordance with ISO 14040/44 standards.
<a href="#">YEK-G</a>	A system developed by EPIAŞ using its own resources and blockchain technology and designed to track all processes of electricity generation from the origin to the consumer in sectors and organizations with high electricity consumption, as well as individual users. The aim of the system is to promote the use of renewable energy sources, protect the environment, and make renewable energy accessible to all.

## APPENDIX - LIST OF KPIS

KPI Code	Description	Related Action	Level	KPI Formula
KPI001	Number of companies with corporate carbon footprint calculation	OSEP02	General	Number of companies participating in the calculation/total companies
KPI002	Number of companies with product lifecycle calculation	OSEP02	General	Number of companies participating in the calculation/total companies
KPI003	Financing provided within the scope of the action plan	OSEP03	General	USD Million
KPI004	Number of energy efficiency projects	OSEP04	General/ Company	Number of energy efficiency projects
KPI005	g CO <sub>2</sub> /km emission value of vehicles	OSEP05	Company	Vehicle emissions g CO <sub>2</sub> /km
KPI006	Supply industry exports	OSEP05	Company	USD Million

## APPENDIX - LIST OF KPIS

KPI Code	Description	Related Action	Level	KPI Formula
PI001	Percentage of companies participating in surveys	OSEP01	General	Survey , %
PI002	Percentage of companies participating in trainings	OSEP01	General	Number of companies participating in the trainings/total companies
PI003	Number of shared wisdom meetings	OSEP01	General	Annual number of meetings
PI004	Percentage of companies participating in meetings	OSEP01	General	Number of companies participating in the meetings/total companies
PI005	Training hours per person, manager	OSEP01	General	Number of managers participating in the trainings x training hours
PI005	Training hours per person, employee	OSEP01	General	Number of employees participating in the trainings x training hours
PI007	Number of announcements	OSEP01	General	Number of announcements made
PI008	Number of companies that took corporate carbon footprint calculation training	OSEP02	General	Number of companies participating in the training/total companies
PI009	Number of companies that took lifecycle evaluation training	OSEP02	General	Number of companies participating in the training/total companies
PI010	Renewable energy usage rate	OSEP02	Company	Renewable energy usage/total energy
PI011	Energy consumption per product	OSEP02	Company	Equivalent energy consumption/product
PI012	Recyclable raw material usage rate	OSEP02	Company	Recyclable raw material/total raw material
PI013	Share of non-recoverable waste	OSEP02	Company	Non-recoverable waste/total waste
PI014	Water consumption per product	OSEP02	Company	Water consumption/product
PI015	Wastewater reclamation rate	OSEP02	Company	Reclaimed wastewater/total wastewater
PI016	Number of producers with ISO9001, 14001 certification	OSEP03	General	Number of companies with certification/total companies
PI017	Renewable energy financing provided within the scope of the action plan	OSEP03	General	USD Million
PI018	Number of companies financed	OSEP03	General	Companies
PI019	Number of companies with energy management certification (ISO 50001)	OSEP04	General	Number of companies with certification/total companies
PI020	Renewable energy usage rate, from site	OSEP04	Company	From-site renewable energy usage/total energy consumption
PI021	Renewable energy usage rate, supplier	OSEP04	Company	From-supplier renewable energy usage/total energy consumption
PI022	Waste generated per product	OSEP04	Company	Waste generated/product
PI023	Number of companies with zero-waste certification	OSEP04	General	Number of companies with certification/total companies
PI024	Share of recycled raw material per product	OSEP04	Company	Share of recycled raw material in product by weight/total weight of raw material in the product
PI025	Share of recyclable raw material per product	OSEP04	Company	Share of recyclable raw material in product by weight/total weight of raw material in the product
PI026	Annual number of electric vehicles produced	OSEP05	Company	Annual number of electric vehicles produced
PI027	Annual number of other alternative fuel vehicles produced	OSEP05	Company	Annual number of other alternative fuel vehicles produced
PI028	Number of electric vehicle parts manufacturers	OSEP05	General	Number of electric vehicle parts manufacturers
PI029	Participation rate in overseas trade fairs and promotional events	OSEP05	General	Number of companies participating in overseas trade fairs and promotional events/total companies
PI030	Percentage of discrimination and inequality complaints received	OSEP06	Company	Discrimination and inequality complaints/total complaints
PI031	Occupational accident incidence rate	OSEP06	Company	$\frac{\text{Total Accidents}}{\text{Total man-hours of work}} \times 1,000,000$
PI032	Occupational accidence weight	OSEP06	Company	$\frac{\text{Total lost days due to accident}}{\text{Total man-hours of work}} \times 1,000$
PI033	Percentage of corruption, mobbing, and bribery complaints received		Company	Corruption, mobbing, and bribery complaints/total complaints
PI034	Women's employment rate	OSEP06	Company	Women employees/total employees
PI035	Percentage of women in senior management	OSEP06	Company	Women senior managers/total senior managers
PI036	investment in young talent	OSEP06	General	Sectoral training offered in vocational high schools and universities



Işıktepe OSB Mah.  
Kahverengi Cad. No: 11  
16215 Nilüfer / Bursa /  
Türkiye T: +90 224 219 10  
00  
F: +90 224 219 10 90  
E: oib@uib.org.tr